CURRENT LITERATURE.

An introduction to structural botany.[1]

This book contains a description of the morphology of the wall-flower, white lily, and spruce fir as types of dicotyledons, monocotyledons, and gymnosperms, respectively. In writing it Dr. Scott has intended to make it a first guide to the study of the structure of the seed plants, and has sought to put before beginners in the study of botany information which is correct as far as it goes. The book is of course to be used only in connection with laboratory study of the plants themselves. The author has succeeded admirably in executing his design, and there is little to be criticised unfavorably. One can hardly help the feeling that for beginners he sometimes goes too far into details, but it is not easy to say what should be passed over.

Aside from a few unfortunate phrases, such as "male flower," what we should consider a blemish in the book arises from the order of treatment. The author begins with the seed plants. Had he made the proposed second volume on cryptogams the first, we think he would have done wisely. But there will always be difference of opinion on this point, and Professor Scott doubtless considered carefully the objections and advantages in both modes of treatment.

By reason of the order selected, however, he meets insuperable difficulties in the presentation of a really modern view of the flower and the reproductive organs connected with it. There is no hint at the nature of pollen grains and the embryo sac, or of the cells formed in them. In discussing the gymnosperms he is obliged to refer to the resemblance of the sexual organs of the female gametophyte to corresponding organs in certain cryptogams. If it be replied that these are matters too recondite for an elementary book on morphology, it may be answered that they would be matters of course had they been approached from the other direction. Naturally one can not drive the butt end of the wedge into a log.

An excellent chapter on nutrition is introduced after the description of the two angiosperms; from which we fear the ordinary student (whose capacity for misunderstanding is almost limitless) might infer that the matter did not apply to the gymnosperms.

We trust that Dr. Scott will find this volume meeting with such success that he will soon prepare the companion volume on cryptogams.

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[1] SCOTT, D. H.: An introduction to structural botany (flowering plants). 12mo. pp. xii + 288. figs. 113. London: A. & C. Black. [New York: Macmillan & Co. $1.00.]

A "practical flora."[1]

What is it? Barring the need of a distinctive name and one that would aid in selling the book any one would be puzzled, we imagine, to say why it should bear such a title. True, Mr. Willis, the compiler (for he is nothing else), says in the preface that his design is "to show the practical aspects of the vegetable world," and asserts that "there has been a long-felt want for a work of such practical character, and this book has been prepared to meet the demand." But his book is neither a *flora* nor *practical*, so far as we can judge. It is a compilation of descriptions of flowering plants selected from all countries under the sun, including a large number of native plants. On what principle the "careful selection" is based does not appear except in the preface. The exotics described are generally plants of economic importance, but many other species of *equal* economic importance are not described.

Indeed the writer seems to have selected his plants to fit his pages. At the beginning, when the pages were all before him, we find among the Ranuculaceæ forty-three species described, including such unimportant ones as Ranunculus rhomboideus and Anemone parviflora; of Viola eighteen species, including V. Selkirkii; while as space began to diminish, the Compositæ are cut off with six and Liliaceæ with nine!

How this book could be "the outgrowth of a successful class-room experience" we cannot understand. Does Mr. Willis have his students "analyze" Cinchona calisaya, or Diospyros ebeneum, or Areca catechu, or any of the multitude of other plants that they never saw, and never will see, in this country? We could understand an encyclopedia of economic plants; but this book, with its mixture of native and exotic, valuable and useless plants, with its "keys" and descriptions, its scrappy accounts of history and use, is quite beyond our understanding.

We cannot afford space for quotation, except of a few definitions which introduce the book, that our readers may be enrolled among "the people we have smiled with."

"*Structural Botany* has for its object the investigation of the structure, mode of growth, and functions of the cells and vessels that make up the plant. *Organography* is a division of this department that has special reference to the organs. *Morphology* is properly a division of Structural Botany and notes the changes that take place in the cells and tissues of plants. *Physiological Botany* takes into consideration the vital action in the reception, preparation, and disposition of the nourishment necessary to keep up the growth of the plant and to

[1] Willis, O. R.: A practical flora for schools and colleges. 8vo. pp. xvi + 349. New York: American Book Co. 1894.

enable it to perform the offices of flowering and fruiting. . . . To the above may be added the *Art* or *Practice* of Botany, which consists in applying the principles investigated under the above heads to determining the class, order, etc., of an individual plant."

Comment is unnecessary. The American Book Co.'s "reader" must have been on a vacation when they accepted this book!

Bacteriology and the dairy.

Dairy products constitute a valuable source of wealth in the United States, and several colleges have already established dairy schools. Wisconsin is not only in the front rank of s ates in the value of its milk products, but was the first to establish a thoroughly equipped dairy school. Shortly after that was done Dr. Russell was put in charge of the bacteriological work of the experiment station and the dairy school, and much important work is now in progress. The experiment station now conducts a creamery throughout the year, which gives opportunity for bacteriological and other experiments on a commercial scale. A science so important to the dairymen of course demands a place in the instruction of the dairy school. Finding no suitable small manual of bacteriology in its relation to the dairy, Dr. Russell set himself to write one.[1] It is divided into three parts, the first giving a summary account of the bacteria in general, while parts two and three are concerned with bacteria in their relation to milk, and bacteria in their relation to milk products. The author's endeavor has been to present the important facts in regard to the bacteria in a compact and simple way, and then to apply these principles to the practice in the dairy, creamery, and cheese factory. Since the book is intended mainly for students and dairymen the author has written in language as free from technical terms as possible, though he has not sacrificed clearness for the sake of doing this. He has also avoided overburdening his text with references to literature, though authority for many facts is cited.

We hope that the conciseness, simplicity, and accuracy of this little manual, as well as its commercial bearing, will insure it a wide sale, and that the first edition will soon be exhausted. This edition has been purposely kept small so that the book may be kept up to date in the rapidly advancing science of which it treats.

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[1] RUSSELL, H. L.: Outlines of dairy bacteriology. Small 8vo. pp. viii+186. Madison, Wis.; published by the author. $1.00.

An outdoor book.

The list of those who love to wander afield and drink in the beauties of unspoiled Nature under all skies is a long one. A few have seen, and have tried by telling their visions to awaken the love of others. Thoreau, Flagg, Burroughs, Abbott, Gibson, are names well known in this form of literary effort; and there are a host of others less familiar, perhaps, but scarcely less interesting. There lies before us a book[1] by Mr. Joseph Jackson, of Worcester, Mass., entitled, "Through Glade and Mead," which brings visions of the same fields, meadows, and woodlands, seen this time through the eyes of a botanist. Mr. Jackson writes of the plants and birds with the pen of a lover and even the "closet botanists," as they are reproachfully called, reading his lines, will want to go back to their freer days and prowl through glade and mead once more.

As appendix A appears the second edition of the Flora of Worcester county, a catalogue of the phaenogamous and vascular cryptogamous plants containing 1,098 species and varieties, of which fifty-five are cryptogams. Appendix B is a list of the trees, shrubs, and evergreen plants growing in the same region.

The book is most elegantly printed and is illustrated by a series of half-tones from photographs by Mr. Lyford. An *edition de luxe*, thirty-five signed copies illustrated by fourteen platinotypes, has also been issued, and the ordinary edition is limited to 500.

Minor Notices.

While books of this nature hardly come within the scope of this journal, Mr. Foster-Melliar has given us such a charming volume in his "book of the rose"[2] that it deserves mention. The writer is a successful enthusiast in the cultivation of roses, and gives the benefit of his long experience in a clear and full way that leaves little to be desired. A history and classification of roses is followed by a consideration of soils, planting, manures, pruning, stocks, propagation, etc. An interesting chapter deals with "pests," both insects and plant parasites, and a monthly calendar of necessary operations closes the volume, which is also completely indexed. The happy style of treatment, and the clear presentation of the needful operations would tempt almost any one to become a "rosarian."

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[1] JACKSON, JOSEPH: Through glade and mead; a contribution to local natural history. 8vo. pp. xiv + 332, illust. Worcester, Mass.: Putnam, Davis & Co. 1894.

[2] FOSTER-MELLIAR, REV. A.: The book of the rose. 8vo. pp. 336. pl. 29. London and New York: Macmillan & Co. 1894. $2.75.